

2012
B.Sc. (Hons.) Bio-Informatics
Third Semester
BIN-3001: Fundamentals of Molecular Biology

Time allowed: 3 Hours

Max. Marks: 60

NOTE: Attempt five questions in all, including Question No. 1 which is compulsory and selecting two questions from each Unit.

x-x-x

I. Answer the following:-

- a) What are transposons?
- b) How are mutants characterized?
- c) What the meant by degeneracy of genetic code?
- d) What is the importance of 5' capping in mRNA?
- e) Why is Lac Operon known as an inducible Operon?
- f) Name the three types of DNA polymerases found in prbkaryotes and give their functions. (6x2)

UNIT - I

- II. a) What are various modes of replication?
b) Discuss process of 3' polyadenylation and its importance. (2x6)
- III. a) How is DNA repaired by photoreactivation?
b) Write a note on nuclear export of mRNA and mRNA stability. (2x6)
- IV. a) How are leading and lagging strands of DNA synthesized?
b) Enlist various types of DNA polymerases and give their functions. (2x6)

UNIT - II

- V. a) Explain the wobble hypothesis and give its importance
b) What are the various types of nutrients and frame shift errors? (2x6)
- VI. a) Explain the process of prokaryotic translation.
b) What is catalyzed repression give suitable example? (8,4)
- VII. a) Discuss Trp Operon and its regulation.
b) Enlist various types of mutagens. (8,4)

x-x-x